

REMARKS/ARGUMENTS

Status of the Application

Prior to entry of this Amendment, claims 1-37 were pending for examination. An Office Action mailed June 9, 2009 rejected claims 1, 10-13, 21, 24, 26-28, 31, and 33-35 under 35 U.S.C. § 103(a) as being anticipated by U. S. Patent No. 6,985,912 to Mullins et al. (hereinafter "Mullins") in view of non-patent literature entitled *An enterprise directory solution with DB2*, by S.S.B. Shi et al., IBM Systems Journal, Vol. 39, No. 2, 2000 (hereinafter "IBM System") and further in view of U.S. Patent Pub. No. 2002/0143943 of Lee et al. (hereinafter "Lee"); rejected claims 2, 3, 5, 6, 14, 15, 17, 25, 29, 32 and 36 under 35 U.S.C. § 103(a) as being unpatentable over Mullins in view of IBM Systems, in further view of Lee, and in view of U. S. Patent No. 5,694,598 to Durand et al. (hereinafter "Durand"); rejected claims 4, 16, 30, and 37 under 35 U.S.C. § 103(a) as being unpatentable over Mullins in view of IBM Systems, in further view of Lee, and in further view of U. S. Patent No. 6,085,188 to Bachmann et al. (hereinafter "Bachmann"); rejected claims 7-9 and 18-20 under 35 U.S.C. § 103(a) as being unpatentable over Mullins in view of IBM Systems, in further view of Lee, and in further view of U. S. Patent No. 5,596,746 to Shen et al. (hereinafter "Shen"); and rejected claim 22 under 35 U.S.C. § 103(a) as being unpatentable over Mullins in view of IBM Systems, in further view of Lee, in further view of Durand, and in further view of Bachmann.

This amendment amends claims 1, 13, 21, 24, and 31. No claims have been canceled. Hence, after entry of this amendment, claims 1-37 will stand pending for examination. Claims 1, 13, 21, 24, and 31 are independent claims. The applicant respectfully requests reconsideration of the pending claims, for at least the reasons presented below.

35 U.S.C. § 103 Rejection, Mullins in view of IBM System, in further view of Lee

The Office Action has rejected claims 1, 10-13, 21, 24, 26-28, 31 and 33-35 under 35 U.S.C. § 103(a) as being anticipated by Mullins in view of IBM System, and in further view of Lee. The Applicant respectfully submits that the Office Action does not establish a *prima*

facie case of obviousness in rejecting these claims, as amended. Therefore, the Applicant requests reconsideration and withdrawal of the rejection.

In order to establish a *prima facie* case of obviousness, all claimed limitations must first be taught or suggested by the prior art. *See, e.g., DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006). The Office Action must then provide an explicit analysis supporting the rejection. *See KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (“a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art”). While the Office Action can use one of several exemplary rationales from the MPEP to support an obviousness rejection under *KSR*, all the rationales still require the Office Action to demonstrate that all the claim elements are shown in the prior art. *See* MPEP §2143. As will be discussed below, the references cited by the Office Action do not teach or suggest each claimed limitation. For example, none of the references, alone or in combination, teach or suggest determining a relational database from a plurality of data stores to service said request, wherein the plurality of data stores comprises the relational database and an LDAP directory, which LDAP directory includes at least one multivalued attribute. Furthermore, none of the references teach or suggest, alone or in combination, determining the relational database from the plurality of data stores by creating a partitioning expression for each of said data stores, evaluating said partitioning expression against said first filter and said request to access data, creating a second filter for a data store if said partitioning expression is satisfied, and providing said second filter to a translation module.

As noted previously, Mullins “relates in general to enhancing database access and performance when correlating or translating one database to another database or to an object programming application.” (Col. 1, lines 13-16) Mullins references “a mapping system for handling data requested by an object software application model in a manner that is compatible with relational data stores.” (Col. 7, lines 28-31) “The mapping information can be used to map from objects to relational models or vice versa, objects to objects, object to COBAL or vice versa, and object to XML and the like.” (Col. 7, lines 41-44) More specifically, Mullins

describes a mapping system that includes “data in the first database format stored in the system; rules for translating from the first format to the second format stored as a separate structure from the data; and means for applying the rules to the data to obtain the second format.” (Col. 13, lines 13-17) That is, the rules of Mullins define the relationships between the objects and the database. (Col. 13, lines 40-48) However, Mullins does not disclose determining a relational database from a plurality of data stores to service said request, wherein the plurality of data stores comprises the relational database and an LDAP directory, which LDAP directory includes at least one multivalued attribute (LDAP being an application protocol for querying and modifying directory services running over TCP/IP). Furthermore, Mullins does not teach or suggest determining the relational database from the plurality of data stores by creating a partitioning expression for each of said data stores, evaluating said partitioning expression against said first filter and said request to access data, creating a second filter for a data store if said partitioning expression is satisfied, and providing said second filter to a translation module.

In response to these arguments, the Office Action introduces the IBM System and provides the Abstract therefrom. This Abstract notes that “this paper discusses an implementation of LDAP that uses the IBM DATABASE 2™ relational database as the data store and query engine to meet the directory service requirements.” However, IBM System teaches only the mapping of single-valued LDAP attributes, and expressly teaches away from mapping multivalued LDAP attributes, or object classes, into a DB2 relation:

At first glance, it seems very obvious that we should be mapping an LDAP object class into a DB2 relation. However, this mapping posed a serious problem since the LDAP model allows both single-valued and multivalued attributes. [...] Some database systems (such as DB2) are attempting to support multivalued attributes. However, the implementation is not available yet. Unnormalized relations will make update operations (e.g., add, modify, and delete) fairly difficult to manage. We also discovered that we might lose some data semantics during the update process when multivalued attributes exist. (IBM System, page 365).

As evidenced in the paragraph above in the reference cited by the Examiner, it is well known in the art that an LDAP model allows for both single-valued and multivalued attributes. However, IBM System teaches away from mapping multivalued attributes (or an object class) to a relational database. Claim 1 recites, amongst other features, mapping at least one multivalued attribute to a relational database. Therefore, IBM System neither teaches nor suggests all of the limitations in claim 1.

Claim 1 has been further amended in the receiving step to further clarify that a request is received to access data for one or more attributes from an LDAP directory. This is supported in the Specification, which discloses translating a request from an LDAP operation on logical object classes (or sets of attributes) to one or more operations on RDBMS tables (page 21, lines 10-11).

This Office Action also introduces Lee in support of the proposition that Lee teaches that determining the relational database from the plurality of data stores comprises comparing the filter for accessing the data of the attributes to a partitioning expression for each of the data stores. Lee generally discloses technology to support multiple data stores, for instance, identity systems, web access management systems, and other similar systems (paragraphs 0008 and 0011). The Office Action cites and quotes paragraph 0111 of Lee, which states: "With dynamic group management features, users can be automatically added or removed if they meet the criteria specified by the LDAP filter." Applicant respectfully submits that the LDAP filter that is used in determining whether users should be added to or removed from a group in Lee is not the same as the filter against which the partitioning expression is evaluated for purposes of determining the relational database from the plurality of data stores, as disclosed in Claim 1. Similarly, the "partition support" referenced in Lee (paragraph 0148) bears little similarity to the "partitioning expression" disclosed in claim 1. As used in claim 1, a "partitioning expression" generally means the criteria for defining what data is in a particular data store (Specification, paragraph 00131). In Lee, however, Figure 5 includes a "partition support" for fat and flat tree directories in an Identity System in order to remedy the loss of

benefit associated with a logical directory. Accordingly, Applicant submits that the terms are used in different contexts and have different meanings.

Therefore, the Applicant contends that Mullins in view of IBM System, and in further view of Lee, does not teach or suggest determining a relational database from a plurality of data stores to service said request, wherein the plurality of data stores comprises the relational database and an LDAP directory, which LDAP directory includes at least one multivalued attribute. Additionally, none of the references teach or suggest, alone or in combination, determining the relational database from the plurality of data stores by creating a partitioning expression for each of said data stores, evaluating said partitioning expression against said first filter and said request to access data, creating a second filter for a data store if said partitioning expression is satisfied, and providing said second filter to a translation module.

Claim 1, upon which claims 2-12 depend, claim 13, upon which claims 14-20 depend, and claim 21, upon which claims 22 and 23 depend, each recite in part receiving a request to access data for one or more attributes from an LDAP directory, said request including said attributes in a first data format and a first filter for accessing the data of the attributes and determining a relational database from a plurality of data stores to service said request, wherein the plurality of data stores comprises the relational database and said LDAP directory, said LDAP directory including at least one multivalued attribute and wherein determining the relational database from the plurality of data stores comprises creating a partitioning expression for each of said data stores, evaluating said partitioning expression against said first filter and said request to access data, creating a second filter for a data store if said partitioning expression is satisfied, and providing said second filter to a translation module. Neither reference, alone or in combination, teaches or suggests determining a relational database from a plurality of data stores to service said request, wherein the plurality of data stores comprises the relational database and an LDAP directory, which LDAP directory includes at least one multivalued attribute. Rather, Mullins teaches translating one database to another database or to an object programming application while IBM System expressly teaches away from mapping multivalued

attributes to a relational database. Additionally, Lee teaches use of technology to support multiple data stores, for instance, identity systems, web access management systems, and other similar systems. Furthermore, none of the references teach or suggest, alone or in combination, determining the relational database from the plurality of data stores by creating a partitioning expression for each of said data stores, evaluating said partitioning expression against said first filter and said request to access data, creating a second filter for a data store if said partitioning expression is satisfied, and providing said second filter to a translation module.

Similarly, claim 24, upon which claims 25-30 depend, and claim 31, upon which claims 32-37 depend, both recite in part a partitioning module receiving access request information from said data source interface, wherein said partitioning module determines a relational database from a plurality of data stores to service said request, wherein the plurality of data stores comprises the relational database and at least one LDAP directory, said at least one LDAP directory including at least one multivalued attribute and wherein determining the relational database from the plurality of data stores comprises creating a partitioning expression for each of said data stores, evaluating said partitioning expression against said first filter and said request to access data, creating a second filter for a data store if said partitioning expression is satisfied, and providing said second filter to a translation module. Neither reference, alone or in combination, teaches or suggests receiving access request information from said data source interface, wherein said partitioning module determines a relational database from a plurality of data stores to service said request, wherein the plurality of data stores comprises the relational database and at least one LDAP directory, said at least one LDAP directory including at least one multivalued attribute. Rather, Mullins teaches translating one database to another database or to an object programming application while IBM System expressly teaches away from mapping attributes to a relational database. Additionally, Lee teaches use of technology to support multiple data stores, for instance, identity systems, web access management systems, and other similar systems. Furthermore, none of the references teach or suggest, alone or in combination, determining the relational database from the plurality of data stores by creating a partitioning expression for each of said data stores, evaluating said partitioning expression against said first

filter and said request to access data, creating a second filter for a data store if said partitioning expression is satisfied, and providing said second filter to a translation module. For a least the previous reasons, Applicant respectfully requests withdrawal of the rejection and allowance of claims 1, 10-13, 21, 24, 26-28, 31 and 33-35.

35 U.S.C. § 103 Rejection, Mullins in view of IBM Systems, in further view of Lee, and in view of Durand

The Office Action has rejected claims 2, 3, 5, 6, 14, 15, 17, 25, 29, 32 and 36 under 35 U.S.C. § 103(a) as being unpatentable over Mullins in view of IBM Systems, in further view of Lee, and in view of Durand. Applicant respectfully requests withdrawal of the rejection and allowance of the claims for at least the reason that claims 2, 3, 5, 6, 14, 15, 17, 25, 29, 32 and 36 each depend upon a base claim that is thought to be allowable as discussed in detail above.

35 U.S.C. § 103 Rejection, Mullins in view of IBM Systems, in further view of Lee, and in further view of Bachmann

The Office Action has rejected claims 4, 16, 30, and 37 under 35 U.S.C. § 103(a) as being unpatentable over Mullins in view of IBM Systems, in further view of Lee, and in further view of Bachmann. Applicant respectfully requests withdrawal of the rejection and allowance of the claims for at least the reason that claims 4, 16, 30, and 37 each depend upon a base claim that is thought to be allowable as discussed in detail above.

35 U.S.C. § 103 Rejection, Mullins in view of IBM Systems, in further view of Lee, and in further view of Shen

The Office Action has rejected claims 7-9 and 18-20 under 35 U.S.C. § 103(a) as being unpatentable over Mullins in view of IBM Systems, in further view of Lee, and in further view of Shen. Applicant respectfully requests withdrawal of the rejection and allowance of the

claims for at least the reason that claims 7-9 and 18-20 each depend upon a base claim that is thought to be allowable as discussed in detail above.

35 U.S.C. § 103 Rejection, Mullins in view of IBM Systems, in further view of Lee, in further view of Durand, and in further view of Bachmann

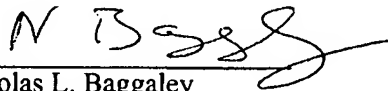
The Office Action has rejected claim 22 under 35 U.S.C. § 103(a) as being unpatentable over Mullins in view of IBM Systems, in further view of Lee, in further view of Durand, and in further view of Bachmann. Applicant respectfully requests withdrawal of the rejection and allowance of the claims for at least the reason that claim 22 depends upon a base claim that is thought to be allowable as discussed in detail above.

CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 781-744-0071.

Respectfully submitted,



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